

REMARKS

In the Office Action dated March 5, 1020, it was stated that:

claims 14-16, and 18-23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Terry; and

claim 17 was rejected under 35 U.S.C. §103(a) as being unpatentable over Terry in view of U.S. Patent No. 2,342,477 to Magnenat.

For the reasons outlined in detail below, it is respectfully submitted that the pending claims are in condition for allowance over the art of record.

Applicants are submitting herewith a Request for Continued Examination (RCE).

All of the rejections are respectfully traversed. Claims 14-23 are currently pending. Claim 23 is currently amended. Claims 24 and 25 are new. Amendment, reexamination and reconsideration are respectfully requested.

Terry

Applicants respectfully submit that Terry fails to teach an action of moulding the second part over the first part, which is a limitation claimed in independent claim 23 for forming an interface between the first and second parts (after the first part is molded). Terry discloses a method including the actions of 1) injection molding a female piece (i.e., first part) in a die of conventional form, 2) placing the *complete* female first part in a die cavity of a male piece (i.e., second part), 3) injecting hot material into the die cavity to form a knuckle interposed *between surfaces of the female first part*, and 4) cooling the male second part. The hot thermoplastic used in molding the male second part contacts the interface surface(s) of the female first part. However, a particular feature is required to prevent binding of the first and second parts. Terry provides a necessary enablement against binding through teaching of pintles and cooperating sockets that taper in a longitudinal direction (col. 2, ll. 61-63). The second molding consists of hot casting about oppositely situated, tapered pintles such that the cooling of the plastic of the second molding affects a shrinkage that is sufficient enough for providing a clearance between the pintles of the female leaf and the knuckle of the male leaf (col. 3, ll. 2-9). In an alternate embodiment, the sockets are formed in the first female part for receiving pintles subsequently formed in the second male part (col. 4, ll. 6-23).

However, the pintle or socket first formed in the first female part is frustoconical in dimension.

As articulated above, the second part recited in claim 23 is molded over the first part. In this manner, the first part generally receives the second part. As is illustrated in the figures originally filed with the application, the first part of the present application more closely corresponds to the second male part of the Terry reference, and the second part of the present application more closely corresponds to the female part of the Terry reference, although distinctions are still included in the present embodiments. In Terry, the female first part is molded first for later receipt of the knuckle 8 included on the molded male second part, which will be situated between pintles 2, 3 of the first molded female part. In the present claim, however, the second part is molded over the first part and, as such, it is inherently not formed between any oppositely situated components of the first part. Therefore, the first part is not female by way of features; however, the second part may be female by features based on the limitation of the second part formed thereover a (inherent) surface portion. In this manner, a surface of the second part is molded over at least a surface portion of the first part to form the interface.

As articulated above, the Terry reference specifically teaches tapered features for preventing binding. This tapered feature is disclosed to furthermore provide for a freedom of articulation between the first and second parts.

In addition to the foregoing, claim 23 recites that the method for molding the two-part hinge includes selecting the timing of the injection of the material of the second part over the first part. This timing is selected based on the shrinkage of the selected material so that the predetermined, desired frictional force is achieved to allow for relative pivotal movement between parts of the hinge.

The following explains the deformation process in more specific detail. The thermal properties of the material injected into the mould for the first part is known and, as such, the shrinkage of the first part may be determined for the transition period between the molding temperature and the cooling temperature (col. 6, ll. 12-15). A thermal behavior of the material of the second part is also known so that the shrinkage of the second part may be determined for the transition period between the molding

temperature and the ambient temperature (col. 7, ll. 2-5). Shrinkage (rate) is determined to affect a controlled tightening of the second part over the first part. The shrinkage is particularly controlled by injecting the material for the second part into the mould before the first part has completed shrinkage. In this manner, the first part undergoes shrinkage simultaneous to the molding process of the second part.

Applicants further submit that the present amendment addresses the Examiner's reply to Applicant's arguments to the previous Office Action. In his Reply, the Examiner stated that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art. Applicants contend that the present amendments present an active process step to control shrinkage. The predetermined frictional force is controlled by *selecting a timing* for injecting the material of the second part into the mold.

In view of the foregoing, it is respectfully submitted that the following distinctions support a contention that Terry teaches away from the claimed invention: a) Terry moulds a second part between opposite surfaces of a first part while the presently claimed second part is molded over the first part; and, 2) Terry provides frustoconical interface surfaces to control free pivotal movement while the present independent claims utilize, inter alia, a first cooling period and/or timing for injection of the (second part) molding material based on resilience and shrinkage properties of the first part. Therefore, it would not have been obvious for one of ordinary skill in the art to have arrived at the invention recited in claim 23 from a review of Terry.

Dependent claims 14-16 and 18-22 merely further patentably define the detailed subject matter of their patent claim or each other. As such, these claims are also believed to be in condition for allowance over Terry as well as the remainder of the cited art.

Dependent claim 17 was rejected as being unpatentable over Terry in view of Magnenat. However, Magnenat was only used for its disclosure of a hinge with an elliptical interface region. It was asserted that at the time of the invention it would have been obvious to one of ordinary skill in the art to modify the hinge of Terry to include an elliptical interface in order to form a biased hinge that has a more preferred position. However, Magnenat does not provide those teachings which are clearly absent from

Terry, as discussed above. Therefore, the asserted combination of Terry and Magnenat fails for the same reason as Terry does by itself. As a result, it is respectfully submitted that dependent claim 17 also patentably defines over Terry in view of Magnenat, as well as the remainder of the cited art.

Additionally, new dependent claim 24 claims a process for selecting the timing, which is based on the determined shrinkages of both the first and second parts.

New claim 24 further limits the selection to a series of actions in the form of determinations based on properties of the respective materials used to form the first and second parts.

Applicants also present herewith new independent claim 25. This claim also recites the features of 1) molding the second part over the first part, 2) shrinking of the first part simultaneous with molding of the second part, and, 3) limiting shrinkage of the second part by a determined resilience of the first part. Thus, for the reasons detailed above, Terry cannot reasonably be interpreted to disclose these features. As a result, claim 25 is also believed to be in condition for allowance over Terry, as well as the remainder of the cited art.

Accordingly, it is respectfully submitted that all of the pending claims are now in condition for allowance over the art of record. Such allowance is earnestly solicited.

Respectfully submitted,

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